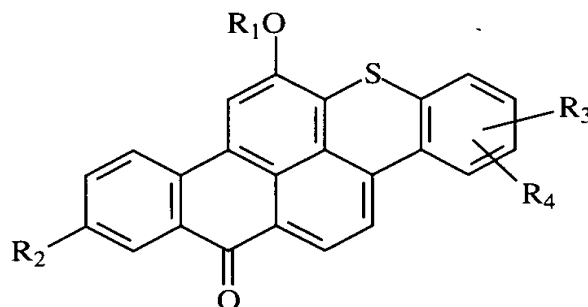


WE CLAIM:

1. An article comprising a polymer matrix and a compound of the formula



wherein R_1 is a straight chain alkyl group having from 5 to 22 carbon atoms or a branched chain alkyl group having from 3 to 22 carbon atoms;

R_2 , R_3 and R_4 are each, independently, hydrogen or alkyl having from 1 to 4 carbon atoms.

2. The article of claim 1, wherein R_2 , R_3 and R_4 in the formula are hydrogen.

3. The article of claim 2, wherein R_1 is a straight chain alkyl group having from 6 to 12 carbon atoms or branched chain alkyl group having from 3 to 12 carbon atoms.

4. The article of claim 2, wherein R_1 is a straight or branched C_8 or C_9 alkyl group.

5. The article of claim 1 wherein the fluorescence luminance factor is at least 3.

6. The article of claim 1 further comprising at least one additional colorant.

7. The article of claim 1 wherein the polymeric matrix comprises a polymer or polymer blend having a molecular weight greater than about 3,000 g/mole.

8. The article of claim 1, wherein the compound is about 0.01 wt-% to about 10 wt-% of the polymer matrix.

9. The article of claim 1, wherein the matrix comprises at least one of a polycarbonate, a polyester, a polyacrylate, a polymethyl-methacrylate, a polyurethane, polyvinyl chloride and a polyolefin.

10. The article of claim 1, in the form of a sheet having a thickness of about 10 microns to about 1000 microns.

11. The article of claim 10, wherein the sheet has retroreflective elements on one side.

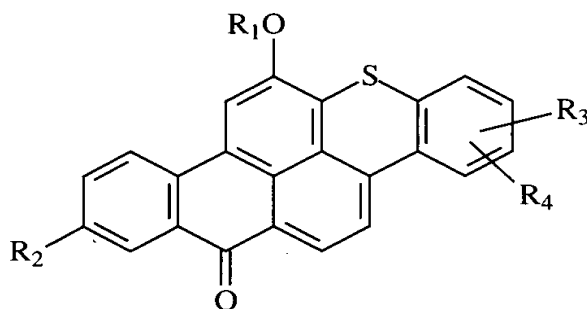
12. The article of claim 1, wherein the polymer matrix is a thermoplastic polymer.

13. A laminate comprising:

(a) a sheet comprising:

(i) a polymer matrix;

(ii) a compound of the formula



wherein R_1 is a straight chain alkyl group having from 5 to 22 carbon atoms or a branched chain alkyl group having from 3 to 22 carbon atoms;

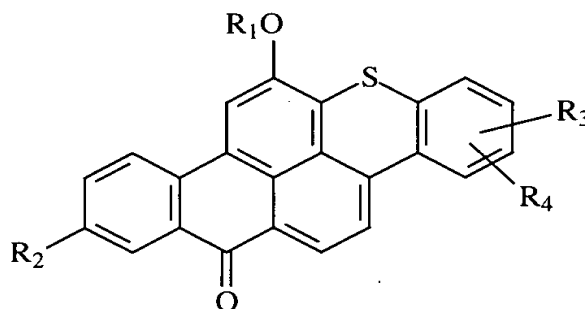
R_2 , R_3 and R_4 are each, independently, hydrogen or alkyl having from 1 to 4 carbon atoms; and

(b) a substrate wherein the sheet is disposed on the substrate to form a laminate.

14. The laminate of claim 13 wherein the fluorescence luminance factor is at least 3.

15. The laminate of claim 13 further comprising at least one additional colorant.

16. The laminate of claim 13, wherein the substrate is retroreflective.
17. The laminate of claim 13, wherein the polymer matrix is a thermoplastic polymer.
18. The laminate of claim 13, wherein R_2 , R_3 and R_4 in the formula are hydrogen.
19. The laminate of claim 18, wherein R_1 is a straight chain alkyl group having from 6 to 12 carbon atoms or branched chain alkyl group having from 3 to 12 carbon atoms.
20. The laminate of claim 18, wherein R_1 is a straight or branched C_8 or C_9 alkyl group.
21. A pigment comprising in particle form:
- (a) a compound of the formula



- wherein R_1 is a straight chain alkyl group having from 5 to 22 carbon atoms or branched chain alkyl group having from 3 to 22 carbon atoms;
- R_2 , R_3 and R_4 are each, independently, hydrogen or alkyl having from 1 to 4 carbon atoms; and
- (b) a polymer matrix comprising at least one of a polycarbonate and a polyester, wherein the compound is incorporated into the polymer matrix.
22. The pigment of claim 21 further comprising at least one additional colorant.
23. The pigment of claim 21, further comprising microstructured surfaces on the pigment forming a retroreflective fluorescent pigment.

24. The pigment of claim 21, wherein the microstructured surfaces have a reflective coating thereon.

25. The pigment of claim 21, wherein the microstructured surfaces have a sealing member thereon.

5 26. The pigment of claim 21, wherein the pigment has an equivalent diameter between about 0.01 millimeter to about 5 millimeters.

27. The pigment of claim 21, wherein the compound comprises about 0.01 to about 2 wt-% of the pigment.

10 28. The pigment of claim 21, further comprising from about 0.1 to about 0.8 wt-% of a hindered amine light stabilizer.

29. The pigment of claim 28, wherein the hindered amine light stabilizer is a 2,2,6,6-tetramethyl piperidine.

30. The pigment of claim 21, further comprising retroreflective elements.

15 31. The pigment of claim 21, wherein the retroreflective elements comprise microspheres or microstructured elements.

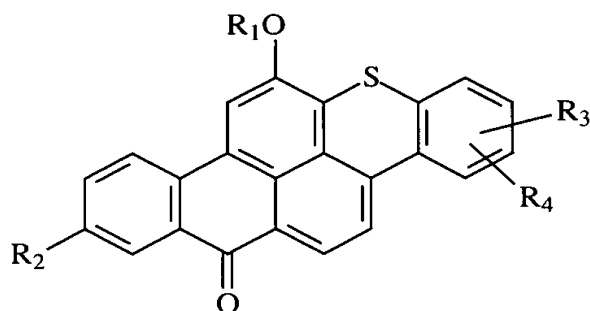
32. The pigment of claim 21, wherein R₂, R₃, and R₄ in the formula are hydrogen.

20 33. The pigment of claim 32, wherein R₁ is a straight chain alkyl group having from 6 to 12 carbon atoms or branched chain alkyl group having from 3 to 12 carbon atoms.

34. The pigment of claim 32, wherein R₁ is a straight or branched C₈ or C₉ alkyl group.

25 35. An article comprising:

- (a) a binder having a first major viewing surface; and
- (b) a pigment comprising, in particle form,
 - (i) a compound of the formula



wherein R₁ is a straight or branched chain alkyl group having from 1 to 22 carbon atoms;

R₂, R₃ and R₄ are each, independently, hydrogen or alkyl having from 1 to 4 carbon atoms; and

(ii) a polymer matrix comprising at least one of a polycarbonate and a polyester, wherein the compound is incorporated into the polymer matrix, and wherein at least some of the pigment particles are disposed on or in the binder so as to be visible on the first major viewing surface of the binder.

36. The article of claim 35 wherein the fluorescence luminance factor is at least 3.

37. The article of claim 35 further comprising at least one additional colorant.

38. The article of claim 35, wherein the binder is a thermoplastic or thermoset polymer, or a mixture thereof.

39. The article of claim 35, wherein the binder comprises at least one of a polyurethane, a polyacrylate, a plasticized polyvinyl chloride and a polyolefin.

40. The article of claim 35, wherein the binder further comprises fillers selected from glass beads, ceramic microspheres, anti-skid particles and inorganic powders.

41. The article of claim 35, further comprising:
a colored backing layer; and

a layer comprising the pigment and the binder, wherein the backing layer is disposed adjacent the fluorescent layer.

42. The article of claim 35, wherein the pigment is disposed throughout the binder.

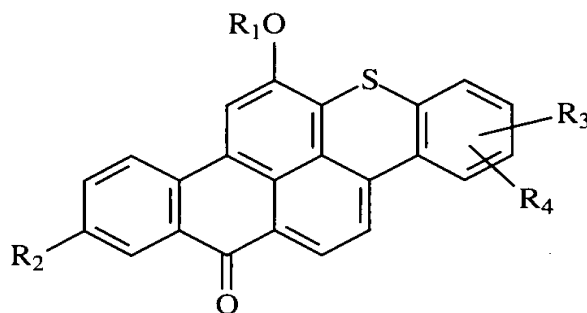
43. The article of claim 35, wherein R_2 , R_3 and R_4 in the formula are hydrogen.

5 44. The article of claim 43, wherein R_1 is a straight chain or branched chain alkyl group having from 3 to 12 carbon atoms.

45. The article of claim 43, wherein R_1 is a straight or branched C_8 or C_9 alkyl group.

46. A coating composition comprising:

10 (a) a compound of the formula



15 wherein R_1 is a straight or branched chain alkyl group having from 1 to 22 carbon atoms;

R_2 , R_3 and R_4 are each, independently, hydrogen or alkyl having from 1 to 4 carbon atoms;

(b) a film-forming resin; and

(c) a solvent.

20 47. The composition of claim 46, wherein the film-forming resin comprises at least one of an acrylic resin, a polyester resin and a vinyl resin.

48. The composition of claim 47, wherein the acrylic resin comprises a polymethylmethacrylate or a copolymer of methylmethacrylate and butylmethacrylate.

25 49. The composition of claim 46, wherein the solvent comprises dipropyleneglycol monomethyl ether acetate, toluene, methylisobutyl ketone, diisobutyl ketone, methylethyl ketone or mixtures thereof.

50. The composition of claim 46, wherein the compound is not less than about 0.01 wt-% of the film forming resin.

51. The composition of claim 49, wherein the solvent is dipropylene-glycol monomethyl ether acetate.

5 52. The composition of claim 46, wherein R₂, R₃ and R₄ in the formula are hydrogen.

53. The composition of claim 52, wherein R₁ is a straight chain or branched chain alkyl group having from 3 to 12 carbon atoms.

10 54. The composition of claim 52, wherein R₁ is a straight or branched C₈ or C₉ alkyl group.

55. A retroreflective article comprising:

(a) a retroreflective substrate; and

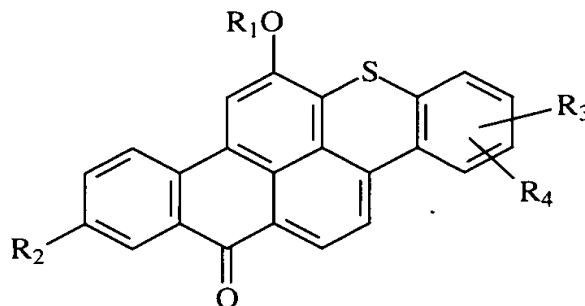
15 (b) a coating composition according to claim 46 disposed as a coating on the retroreflective substrate and wherein the coating is substantially free of solvent.

56. The article of claim 55 wherein the fluorescence luminance factor is at least 3.

57. The article of claim 55 further comprising at least one additional colorant.

20 58. The article of claim 55, wherein the coating has a thickness of about 1 micron to about 250 microns.

59. An article comprising at least one color layer selected from
a) a mixture of a polymer matrix and a compound of the formula



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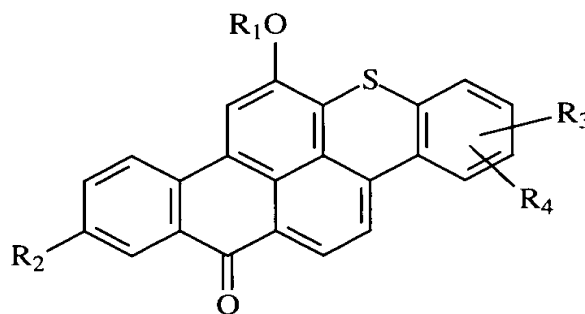
wherein R_1 is a straight chain alkyl group having from 5 to 22 carbon atoms or a branched chain alkyl group having from 3 to 22 carbon atoms;

R_2 , R_3 and R_4 are each, independently, hydrogen or alkyl having from 1 to 4 carbon atoms and wherein said mixture is in the form of a sheet or pigment

5 particle; and

b) a coating composition comprising:

(a) a compound of the formula



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wherein R_1 is a straight or branched chain alkyl group having from 1 to 22 carbon atoms;

R_2 , R_3 and R_4 are each, independently, hydrogen or alkyl having from 1 to 4 carbon atoms and a film-forming resin.

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